Progress Energy

FEB 13 2006

Serial: HNP-06-026

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING THE ONE-YEAR SPECIAL REPORT FOR THE STEAM GENERATOR TUBE INSERVICE INSPECTION RESULTS

Ladies and Gentlemen:

On December 6, 2005, the NRC requested addition information to facilitate the review of the Special Report dated August 1, 2005 (HNP-05-088), which documented the results of the steam generator (SG) tube inservice inspections performed during the May 2004 mid-cycle outage.

Attachment 1 provides the requested additional information.

Please refer any question regarding this submittal to Mr. Dave Corlett at (919) 362-3137.

Sincerely,

D. H. Corlett
Supervisor – Licensing/Regulatory Programs
Harris Nuclear Plant

DHC/jpy

Attachment:

1. Response to the Request For Additional Information (RAI) Regarding the Special Report dated August 1, 2005 (HNP-05-088)

c:
Mr. R. A. Musser, NRC Senior Resident Inspector
Mr. C. P. Patel, NRC Project Manager
Dr. W. D. Travers, NRC Regional Administrator

Progress Energy Carolinas, Inc.
Harris Nuclear Plant
P.O. Box 165
New Hill, NC 27562

A047

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING THE SPECIAL REPORT DATED AUGUST 1, 2005 (HNP-05-088)

Request 1:

During your 2004 mid-cycle steam generator tube inspections, you re-analyzed all of the steam generator tube bobbin coil eddy current data obtained during refueling outage 11 (RFO 11), which were performed in 2003.

a. *Please clarify the extent of this re-analysis (e.g., from tube-end to tube-end for 100% of the tubes).*

b. *In addition, discuss the extent to which you used a turbo mix during this re-analysis effort and whether you performed subsequent rotating probe examination of any indications identified in the turbo-mix. This re-analysis identified one tube which you estimated to be 37% through-wall. An independent analysis of this data by the NRC staff resulted in a size estimate of 40% through-wall. The staff recognizes the potential uncertainties in sizing the indication with the bobbin coil; however, the size of the indication is important in determining the classification of the inspection results which is used in determining the inspection frequency. Please clarify the inspection categorization (i.e., C-1, C-2, and C-3) of your 2003 outage.*

c. *In addition, you classified the results of your 2004 inspection as Category C-1. This classification was made based on the results of inspections performed after plugging three tubes that were damaged by a foreign object. The estimated depths of the degradation in these tubes were in excess of 40% through-wall. The classification of the results from the three tubes plugged during your 2004 outage was not provided (e.g., C-3) in your 2004 inspection summary reports.*

d. *The inspection results classification from the 2003 and 2004 outage could affect future inspection intervals. As a result, please discuss your future inspection plans for the steam generator (i.e., do you plan to continue performing inspection at intervals of not less than 12 nor more than 24 calendar months after previous inspection).*

e. *The NRC staff recognizes that inspection categorization is removed from the new standard technical specifications (i.e., TSTF-449, Revision 4). As a result, if you plan to adopt these new technical specifications prior to exceeding 24 months since your prior inspection (i.e., May 2004), the categorization of the 2003 and 2004 inspection results will not affect future inspections. Please discuss your plans for adopting these new technical specifications.*

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING THE SPECIAL REPORT DATED AUGUST 1, 2005 (HNP-05-088)

Response 1.a:

Re-analysis (i.e., secondary analysis) of the RFO-11 bobbin coil eddy current data was performed with Computer Data Screening (CDS) analysis software. During May 2004, the sort parameters for CDS were properly entered, and all of the RFO-11 data in the region that had been missed previously (i.e., the 0.5" to 1.0" region above the tubesheet) was reviewed. To ensure adequate overlap, the entire tubesheet region from the tube end through five inches above the tubesheet was reviewed.

Response 1.b:

The turbo-mix approach was not used during the CDS review of the RFO-11 data. The re-analysis identified the indication using the bobbin coil data. As stated in the request, potential uncertainties exists in sizing the indication with bobbin coil since this technique is not qualified for sizing small volumetric indications due to the large uncertainties involved. The 37% through-wall value is an estimate provided by the company's Eddy Current Testing (ECT) Level III by simple comparison to the flat bottom holes in the calibration standard. Based on the results of the RFO-11 data considering the estimated 37% through-wall indication, the inspection category would have been C-1.

Response 1.c:

The three tubes plugged during the 2004 outage were inspected to bound the repair, so classification of the results from the inspection and repair of these tubes was not required. Subsequent to the tube repair inspection, a SG tube ISI was performed, and the results of this SG tube ISI were categorized as C-1.

Response 1.d:

The next SG tube ISI will be performed during the Spring 2006 outage (RFO-13), which is scheduled to start on April 8 and is within the interval noted as being not less than 12 nor more than 24 calendar months after the previous inspection.

Response 1.e:

Due to timing, HNP does not plan to adopt the new standard Technical Specifications (i.e., TSTF-449, Revision 4) prior to the next scheduled inspection (i.e., Spring 2006). However, Harris plans to submit a request to modify the SG portion of HNP TS consistent with these new standard Technical Specifications by May 31, 2006 as requested by GL 2006-01, Steam Generator Tube Integrity and Associated Technical Specifications dated January 20, 2006.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING THE SPECIAL REPORT DATED AUGUST 1, 2005 (HNP-05-088)

Request 2:

During your secondary side pressure test in 2004, pressures were limited to approximately 60 pounds per square inch gage (psig) because of a nitrogen leak. Please discuss the source of the leak.

Response 2:

The source of the leak was not discovered. However, the pressure was sufficient to identify the leaking tube that was subsequently repaired.

Request 3:

Please discuss the source of the loose part that resulted in the primary-to-secondary leak in 2004.

Response 3:

Material from the seat ring of a Main Feedwater Isolation Valve was identified as the likely source of the loose part. The valve disc chipped the upper portion of the valve's seat ring introducing a piece of this material into the feedwater system. Subsequently, a piece of material, consistent with the material composition of the valve seat ring, was found lodged against the SG tubes on top of the secondary tubesheet.

Request 4:

During the first inservice inspection, small changes in the eddy current data (when compared to the preservice inspection) were observed for several benign indications. These changes were primarily attributed to the first heat cycle. Please discuss whether any similar changes in the benign signals (manufacturing marks, dents, dings, etc) were observed during your 2004 inspections. If so, discuss the cause.

Response 4:

No further change in benign signals were noted in the 2004 SG tube ISI.

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING THE SPECIAL REPORT DATED AUGUST 1, 2005 (HNP-05-088)

Request 5:

Please discuss whether any rotating probe examinations were performed at dents, dings, or the U-bend regions of your tubes. If so, discuss the results.

Response 5:

No rotating probe examinations were performed at dents, dings, or the U-bend regions of the tubes during the 2004 SG tube ISI.

Request 6:

a. *It is the NRC staff's understanding that a foreign object search and retrieval was performed at the top of the tubesheet in steam generators A and C during your 2004 inspections. Please confirm that all loose parts were removed from the steam generators.*

b. *In addition, please discuss whether any potential loose part signals were observed in your eddy current data. If the parts were not removed or the locations (where eddy current indicated a potential loose part) were not visually inspected, please discuss the results of any evaluations performed to ensure these parts (or suspected parts) would not result in a loss of tube integrity for the period of time between inspections.*

Response 6.a:

A Foreign Object Search and Retreival (FOSAR) was performed at the top of the tubesheet in SG's "A" and "C" with the assistance of a vendor that specializes in these types of inspections. All loose parts found during the FOSAR were removed from SG's "A" and "C."

Response 6.b:

No additional loose part signals were identified in the eddy current data other than the signal of the loose part removed from SG "C."